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Blockchain Technology and Quality of Accounting Information: A Systematic Literature Review

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ABSTRACT

The purpose of this study is to examine the scholarly literature regarding the impact of blockchain technology on the quality of accounting information. The research methodology is a bibliometrically mapped Systematic Literature Review (SLR) comprising 36 reputable resources. The findings demonstrate numerous advantages of blockchain technology, particularly for accountants. One of the important advantages is distributed recordkeeping, which enhances information transparency and reduces information asymmetry. As a result, it significantly improves the quality of accounting information. The implication of this research is to provide comprehensive insights into the potential paradigm shift in accounting facilitated by blockchain adoption. Furthermore, the study serves as a foundational platform for future research on the implementation and impact of blockchain in accounting information quality.

Keywords: Blockchain technology; accounting information; artificial intelligence; transparency; distributed ledger.

INTRODUCTION

The Enron scandal in 2001 was one of the biggest financial scandals in history, involving systematic and complex accounting manipulations. Arthur Andersen, who is handling the accounting examination, also faced criticism for its complicity in the removal of relevant documents. This scandal led to the bankruptcy of the company, substantial financial losses for investors, and a pervasive erosion of public confidence in business practices and accounting audits. Consequently, it prompted substantial financial regulatory reforms at the national level. Alongside regulatory changes, many researchers attempted to develop systems and technologies to prevent similar scandals from occurring again. One of their successful products is blockchain technology. By using blockchain, all financial transactions can be recorded in an encrypted blockchain, ensuring integrity and an immutable audit trail.

Blockchain technology, introduced by Satoshi Nakamoto in 2008, has undergone significant growth since its inception. Originally utilized as a ledger for Bitcoin cryptocurrency transactions, blockchain technology has now found applications in various fields, including accounting. A defining characteristic of blockchain technology is Distributed Ledger Transaction (DLT), where transactions are recorded across multiple computers [2]. As a result, it reduces financial statement disclosure errors, thereby improving the quality of accounting infor–mation [26].

Several researchers have investigated the impact of blockchain technology on accounting practices, one of which focuses on the quality of accounting information generated [[1]; [4]; [3]; [17]]. [1] in his research said that the application of blockchain technology will provide benefits to accountants. The ability of blockchain technology to expedite accounting tasks is one of the benefits. They don't have to spend time verifying financial transactions or correcting data or information. Researchers [4], [3], and [17] have studied similar topics and confirmed the findings of [1], indicating that the use of blockchain technology enhances the quality of corporate accounting information. However, the topic of blockchain technology and accounting information quality has not received extensive research. As a result, the researcher must bridge this knowledge gap by conducting a thorough analysis of the academic literature and current research trends regarding the impact of blockchain technology on the quality of accounting information. A literature review needs to be conducted because there is a limitation in the literature that specifically discusses the impact of blockchain technology on the quality of accounting information. Although some studies investigate blockchain technology in the context of accounting in general or auditing [[8]; [19]; [28]], those that focus on the relationship between blockchain technology and the quality of

accounting information are still limited. By thoroughly analyzing the academic literature and current research trends, the researcher can bridge this knowledge gap and provide significant contributions toward understanding how blockchain technology affects the quality of accounting information.

This research has three contributions. First, this SLR gives a comprehensive overview of the state of research on blockchain technology and the quality of accounting information at the moment. This study provides an updated SLR of 35 articles indexed by Scopus and 1 article indexed by SINTA. Second, this study looks into how blockchain technology will impact the quality of accounting data. Blockchain's decentralization and transparency can increase the accuracy of accounting information. Third, by discussing prospective future research directions linked to blockchain and the quality of accounting information, this study adds to the body of knowledge in the accounting field. The researcher hopes that future and present academics who are interested in talking about the connection between blockchain technology and the quality of accounting information will consider this research a helpful resource.

Blockchain Technology

Blockchain technology enables data transmission and storage via interconnected blocks that expand over time. Each block has a timecode, transaction data, and a link to the previous block that indicates its creation date [1]. Technology like blockchain creates and gathers accounting data and information, offers superior insight for making informed decisions in practice, arranges and evaluates accounting data, and enhances report quality and transparency [29]. In the long term, these technologies can effectively reduce information disclosure and risk mismanagement, significantly improve the quality of accounting information, overcome information asymmetry problems, and promote honest financial reporting [24]. According to some researchers, the implementation of blockchain technology will do away with concerns about issues at the facility and delays in submitting financial statements [3].

Quality of Accounting Information

Quality information is defined by the International Financial Reporting Standards, or IFRS, as information that is fair, relevant, understandable, useful, transparent, and clear. To guarantee the accuracy of the information, financial information must consistently measure the income, changes in an entity's value, and financial situation [4]. The most crucial qualitative aspects of financial statements include certain traits like verifiability, comparability, timeliness, and understanding. These attributes place more emphasis on giving users transparent and trustworthy data than they do on giving them false information [4]. Accounting information is valuable when it can estimate the expected value and risk of stock returns [25]. In other words, relevant information assists in forecasting the future condition of the company [25].

RESEARCH METHOD

Methodology

This research uses the Systematic Literature Review (SLR) approach, a systematic qualitative method to compile, evaluate, and synthesize scientific literature related to the research topic. This research uses SLR to minimize biases and add scientific value to its results [8]. An SLR is a method for investigating a collection of scholarly literature with the aim of developing understanding, critical reflection, future research directions, and research questions [23]. As such, it provides a solid foundation and structured methodology to explore a deeper understanding of the research topic, ensures a solid conceptual framework, and provides a basis for the development of significant research findings.

Literature Screening Process

The researcher selected literature sources in Scopus to ensure scientific rigor and inclusiveness. The researcher identified an initial set of keywords related to the research topic, which included blockchain, quality of accounting information, accounting information quality, reporting quality, accounting report, ESG report, ESG disclosure, sustainability reporting, financial reporting, and corporate social responsibility (CSR). Therefore, the researcher defined the Scopus research string in the following way:

(TITLE-ABS-KEY (blockchain) AND TITLE-ABS-KEY ("Quality of Accounting Information" OR "Accounting Information Quality" OR "Accounting Information" OR "Reporting Quality" OR "Accounting Report" OR "Financial Reporting" OR "ESG Report" OR "ESG Disclosure" OR "Sustainability Reporting" OR "Corporate Social Responsibility" OR "CSR"))

The researcher extracted data from Scopus on October 20, 2023. After obtaining the search results, the researcher conducted an examination by filtering

subject areas and document types. Additionally, the researcher performed a manual examination by reading through the abstracts of the literature one by one to filter out relevant literature pertaining to the research topic.

Furthermore, the researcher included additional literature from various sources, following the recommendations of the reviewer. To broaden the scope of the research, the researcher selected one relevant journal from the Journal of Accounting and Finance. The Journal of Accounting and Finance is one of the journals indexed in SINTA (Integrated Information System of State Universities). SINTA is a ranking or academic performance evaluation system managed by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia. By incorporating literature from sources indexed in SINTA, this research aims to encompass diverse perspectives and contributions from the Indonesian academic community in the discussion of the relationship between blockchain technology and the quality of accounting information. This can also enhance the trust and relevance of the research findings in the national academic context.

PRISMA Diagram

Figure 1 depicts the researcher's procedure for selecting literature using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram. PRISMA is a protocol for reporting systematic reviews that consists of a checklist and flow diagram, developed in the field of life sciences to enhance the transparency and accuracy of literature reviews [8]. In this diagram, the researcher mapped out the literature to be identified, included, and excluded from the study, as well as the reasons for the exclusion.

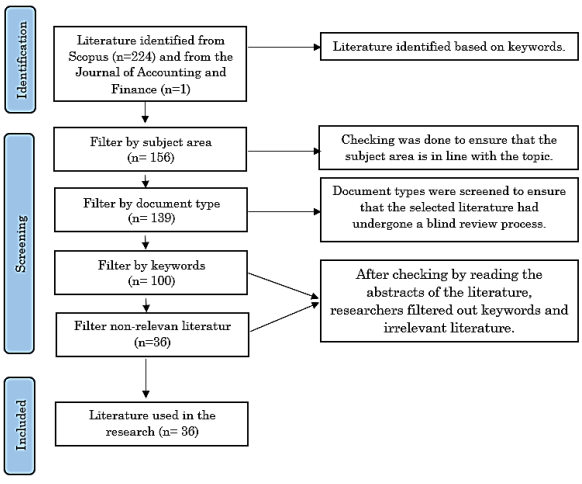

Figure 1. PRISMA Diagram

The researcher conducted a manual check on the 100 filtered articles based on subject area, document type, and keywords. The researcher then excluded irrelevant articles that (a) solely discussed blockchain technology, (b) solely discussed how blockchain technology is affecting the accounting field, or failed to address how blockchain technology is affecting the quality of financial information, and (c) lacked abstracts and could not be downloaded through the University of Indonesia's subscription site. Based on manual checking, researchers excluded 64 articles, leaving 35 articles from Scopus and 1 article from the Journal of Accounting and Finance used in this study.

Bibliometric Visualization using VOSviewer

Figure 2 shows the network visualization of co-occurrence in blockchain technology research and accounting information quality in the period 2017–2023. Based on the results of network visualization of 35 Scopus-indexed articles and 1 SINTA-indexed article, researchers can group 5 clusters that can be identified through the color of the nodes of each keyword. Cluster 1, symbolized in red, consists of blockchain, accounting information, financial reports, financial accounting, financial reporting, and auditing. Cluster 2, symbolized in blue, consists of distributed ledger technology, accounting, and auditing. Cluster 3, symbolized in purple, consists of blockchain technology and accounting information quality. Cluster 4, symbolized in green, consists of blockchain, corporate social responsibility, decision-making, sustainable development, authentication, and ESG reporting. Lastly, cluster 5, symbolized in yellow, consists of the internet of things and big data.

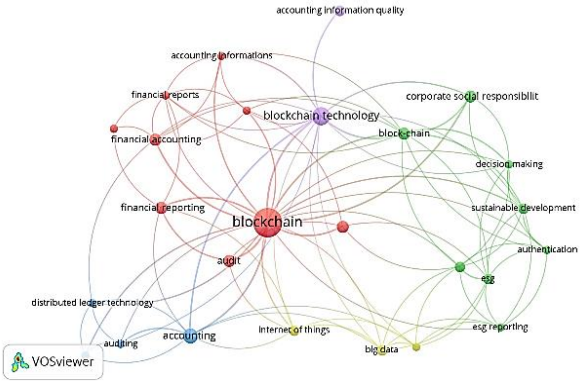

Figure 2. Network Visualization

Figure 3 shows the mapping and clustering of research trends on blockchain technology and accounting information quality based on historical traces or years of research publication. It is evident from the visualization results that the focus of research on the quality of accounting information and blockchain technology is still on the quality of

financial reports from 2017 to 2021. However, beginning in 2020 and continuing through 2023, some researchers are concentrating not only on the quality of financial reports but also on the quality of non-financial reports, including corporate social responsibility, sustainability reporting, and ESG reporting.

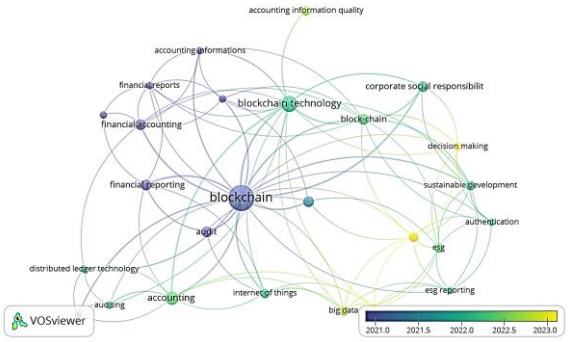

Figure 3. Overlay Visualization

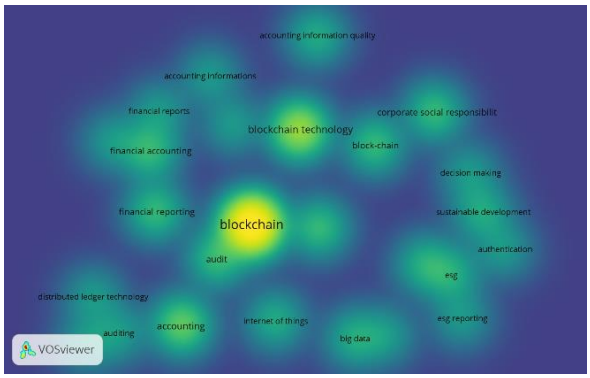

Figure 4. Density Visualization

Figure 4 shows that the higher the density, the more frequently the research is conducted in the literature used in this study. Regarding the visualization in Figure 4, the density visualization results clearly indicate that there is no statistically significant difference between the types of financial and non-financial accounting information. This demonstrates the need for more research on blockchain technology and the quality of accounting information, both financial and non-financial.

RESULTS AND DISCUSSION

General Overview of the Findings

Most Frequently Publication Year

The researcher aims to present a summary of the prior literature according to the year of publication, based on Figure 5. The figure illustrates how the volume of research on the impact of blockchain technology on the quality of accounting information varies annually. Research on this subject has significantly increased compared to 2017, the study's initial year. This demonstrates the growing interest in learning more about blockchain tech–nology and the quality of accounting information.

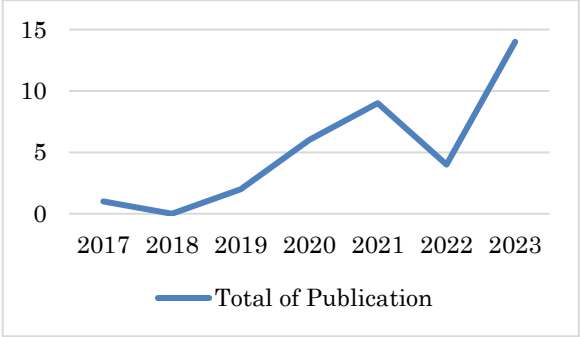

Figure 5. Research Distribution from 2017-2023

Country-wise Publication

Figure 6 reveals the countries that have made the largest contributions to the quality of accounting information through blockchain technology. Developed countries have a contribution of 51%, while developing countries have a contribution of 49%. This indicates that the literature used in this study originates from both developed and developing countries. However, when viewed from the highest number perspective, China and the United States have contributed the most to research related to blockchain technology and the quality of accounting information, with as many as five articles. This is following research [19], which states that China and the United States have conducted the most extensive research on the topic of blockchain technology and the quality of accounting information.

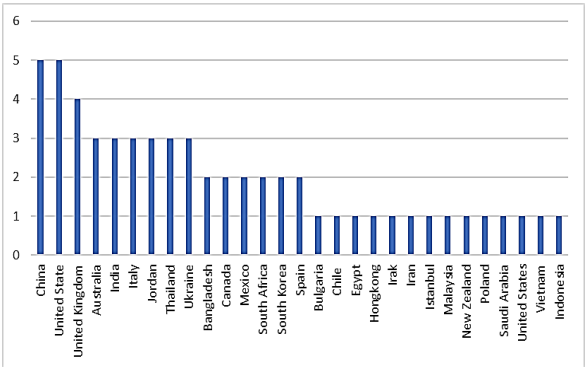

Figure 6. Research Distribution Based on Country

The Use of Research Method

Table 1 demonstrates the wide diversity of methods used in previous literature. Some studies use qualitative and quantitative methods. Based on the number of articles, the most commonly used method by previous researchers was either a literature

review or a qualitative approach. Some researchers have sourced their data from previous studies. However, some researchers collect their data from various sources outside the research context, while others analyze the results of primary data collected by researchers, including experiments, case studies, and interviews. In quantitative research, a wide variety of methods are employed. Some studies use the company's secondary data. However, some studies use primary data through questionnaires and surveys measured using a Likert scale. These data indicate that there are still few studies that test quantitatively related to blockchain technology and the quality of accounting information.

Table 1. Literature List Used in the Research based on the Research Method Used

No	Method	Total	Research Details
1	Experimental and Case Study	6	[12]; [14]; [20]; [22]; [29]; [30];.
2	Questionnaire, Survey, and Interview	4	[1]; [3]; [4]; [26].
3	Quantitative with secondary data	4	[10]; [17]; [36]; [38].
4	Literature Review	21	[2]; [5]; [6]; [7]; [9]; [11]; [13]; [15]; [16]; [18]; [19]; [21]; [24]; [27]; [28]; [31]; [32]; [33]; [34]; [35]; [39].

The Type of Accounting Information

Table 2. Literature List Used in the Research based on the type of Accounting Information

No	Method	Total	Research Details
1	Financial	25	[1]; [2]; [3]; [4]; [9]; [11]; [13]; [12]; [15]; [17]; [18]; [19]; [20]; [24]; [26]; [27]; [28]; [30]; [32]; [34]; [35]; [36]; [37]; [38]; [39].
2	Non-Financial	11	[5]; [6]; [7]; [10]; [14]; [16]; [21]; [22]; [29]; [31]; [33].

Table 2 reveals a heterogeneous selection of accounting information presented in the literature by researchers. More studies focus on the quality of financial accounting information than on the quality of non-financial accounting information. This study refers to non-financial accounting information, which includes non-financial aspects such as Corporate Social Responsibility (CSR), Sustainability Reporting, and ESG Reporting. The table reveals that there are 25 articles that focus on the quality of financial accounting information and 11 articles that address the quality of non-financial accounting information. According to the publication year, studies on blockchain technology and the quality of non-financial accounting information started in 2020, but studies on the subject of blockchain technology and the quality of accounting information started earlier, in 2017. However, the relationship between blockchain technology and the quality of accounting data still requires further investigation. This is because there hasn't been much research on the subject.

Theoretical Perspective

Table 3 illustrates the wide range of theories that have been proposed to explain how blockchain technology affects the quality of accounting infor–mation. The most commonly applied theories are the stakeholder, agency, and legitimacy theories. Most theories are applied in one or two articles, but these three are applied in three articles. However, 24 (twenty-four) articles did not mention the theory used in explaining the topic under study. Furthermore, some literature explains the relationship between the use of information technology (especially block–chain technology) and the quality of financial accounting information, and some literature explains the relationship between the use of information technology (especially blockchain technology) and the quality of non-financial accounting information (such as CSR, Sustainability Reporting, and ESG Reporting).

Table 3. Literature List Used in Research based on the Theory Used

No	Theory Used	Total	Research Details
1	Network Theory	1	[24]
2	Iceberg Theory	1	[11]
3	Fraud Triangle Theory	1	[11]
4	GONE Theory	1	[11]
5	Risk Factor Theory	1	[11]
6	Outsourcing Theory	1	[37]
7	Legitimacy Theory	3	[5]; [14]; [29]
8	Stakeholder Theory	3	[5]; [4]; [14]
9	Transaction Cost Economics Theory	1	[5]
10	Institutional Theory	2	[5]; [14]
11	Signaling Theory	2	[5]; [14]
12	Network Economics Theory	1	[5]
13	Decoupling View	1	[5]
14	Unified Theory of Acceptance and Use of Technology (UTAUT)	2	[1]; [12]
15	Agency Theory	3	[3]; [4]; [14]
16	Technology Acceptance Model (TAM) Theory	1	[10]
17	Diffusion Of Innovation Theory	1	[10]
18	Critical Theory	1	[14]

Discussion

Blockchain technology has significant differences from traditional databases [[9]; [28]; [2]]. One of the main differences lies in the fact that users distribute

and share transaction records among themselves, thereby enhancing transparency and clarity. The system relies on peer-to-peer networks to build trust among those involved in the transaction, eliminating the need for intermediaries [35]. This technology uses encryption, transaction timestamps, and automation capabilities in the execution and recording of its transactions. Consequently, transaction data gains higher reliability and immutability, particularly with the aid of smart contract tech–nology. The use of blockchain technology in accounting has various advantages. [3] explained in his research that the use of blockchain technology provides benefits in terms of reducing transaction data storage costs, while the risk of errors and fraud is reduced. The real-time system and automatic updating of ledgers reduce the need for changes and provide greater transparency. Blockchain makes it possible to use technology, automate procedures, and see transactions more transparently.

In his research, [30] clarified that blockchain offers robust authentication, decentralization, and an impenetrable record of all past transactions. Blockchain-based "triple-entry bookkeeping" [1] produces not two but three entries—a debit, a credit, and a cryptographic signature to confirm the transaction's legitimacy. Participants encrypt and validate data before adding it to the ledger. The whole ledger is updated upon receipt. Multiple entries, each representing a transaction, compose "blocks" that append to the ledger. This way, since each block is linked to the others in a chain by a secure hash created with a hard-to-crack crypto–graphic private key, it contains information that can be linked to the one before it [30]. This causes the recorded accounting information to be more transparent and reliable. [4] in his research stated that the use of AI, such as blockchain technology, is one of the guarantors of information quality in today's destructive and high-risk environment.

Not only does blockchain technology provide many benefits for financial accounting information, but it also provides many benefits for non-financial accounting information. [22] mentioned that blockchain technology has benefits in monitoring CSR activities. The publication mentions that the structure and operation of the blockchain protocol enable transparent, secure monitoring of actions by all members of the CSR network. With the application of blockchain, environment-related information in the supply chain can become more transparent and reliable [[14]; [21]; [33]].

Future Research Direction

Upon reviewing the literature for this study, the researchers discovered a dearth of quantitative research on the impact of blockchain technology on accounting information quality. The majority of previous researchers used qualitative research to explain the topic. Future researchers could potentially fill this research gap. Future researchers could conduct quantitative research related to the topic of the impact of blockchain technology on the quality of accounting information. This aligns with the suggestions from [29] and [39], who suggest that future researchers conduct similar research using large sample sizes and quantitative methods. In addition, future researchers may identify the impact of blockchain technology on the quality of accounting information in specific industries, as suggested by [18]. This is due to the unique characteristics of each industry, prompting further research to explore the optimization of blockchain for specific industry contexts. Further researchers may also examine how blockchain technology affects accounting data quality in various industries. As suggested by [1] and [10], future researchers can also investigate this topic by using a sample of nations that have not yet been examined or by using a sample with a variety of nations. Last, future researchers can explore the topic of blockchain technology and accounting information quality by adding any factors that encourage the use of blockchain technology, as well as challenges and barriers to the use of the tech–nology. This can be found in the following search suggestions from [1] and [10].

CONCLUSION

Blockchain technology has significant differences from traditional databases. Users distribute and share transaction records in blockchain technology, enhancing transparency and clarity. Peer-to-peer networks establish trust without the need for intermediaries. It uses encryption, transaction timestamps, and automation in the execution and recording of transactions, resulting in more reliable and immutable transaction data, especially with the help of smart contract technology. In the context of accounting, the use of blockchain technology provides benefits such as reduced transaction data storage costs and reduced risk of errors and fraud. The real-time system and automatic updating of ledgers reduce the need for changes and increase transparency. In addition, blockchain provides decentralization, strong authentication, and a tamper-resistant ledger of all historical transactions. The use of this technology can support quality accounting practices and provide significant benefits in both financial and non-financial areas, such as monitoring CSR activities transparently and securely.

This study has several implications for readers and future researchers. For readers, this study can

offer implications for understanding the literature and provide deep insights into the potential paradigm shift in the accounting world with the adoption of blockchain. This technology's proposed transparency, reliability, and automation have the potential to transform the processing and reporting of financial information. Readers can understand that blockchain implementation can improve stakeholder trust and the overall quality of financial information. For future researchers, this literature provides a foundation for further research into the implementation and impact of blockchain in accounting information quality. Researchers can further explore the effective integration of blockchain into accounting practices by understanding the identified positive implications.

This research has several limitations. One limitation of this research is its exclusive focus on studies published on the Scopus website. This potentially limits the scope of available information sources. Scopus may not cover all journals or scientific sources relevant to a particular topic, which may result in an understanding that is not fully representative or comprehensive. In addition, the researchers applied some exclusion criteria that led to the screening of many studies. This could potentially lead to an incomplete and limited understanding of the diversity of existing research on the topic of blockchain technology and accounting information quality, thereby reducing the validity and generalizability of the literature review findings. Lastly, the researcher's understanding may limit the results of this study, as it also manually analyzed the literature.

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APPENDIX

Table 4. Research Summary

Researcher Name (Year)	Sample	Result	Limitation
Coyne J.G.; McMickle P.L. (2017)	N/A	This research finds that blockchain has many beneficial business implications. One of them is that blockchain facilitates decentralized asset exchange. In addition, smart contracts reduce the need for intermediaries in financial transactions.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
McCallig J.; Robb A.; Rohde F. (2019)	N/A	This research finds that using distributed systems such as blockchain can improve the accuracy of financial reporting by providing a transparent, openly accessible, and immutable repository of evidence that supports an entity's assertion that it has a claim against another entity.	The limitations of this research are that it only focuses on account receivables, without considering accounts payable, does not address practical implementation challenges, unclear responsibilities for running the blockchain, and regulatory challenges.
Zhang Y.; Liu H.; Luo J.; Zheng C.; Wang S. (2019)	Locate: United States and China Period: 2015-2016	The study's primary findings demonstrate that the use of blockchain technology improves the quality of enterprise information, leading to higher-quality information in areas where it is implemented than in areas where it is not. Furthermore, the decentralized nature of blockchain technology can lessen the need for third-party trust and centralized management in the advancement of commercial enterprises.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this study is that the researcher does not explain in detail the reasons for selecting the object sample and period in the study.
Benedetti H.; Nikbakht E.; Sarkar S.; Spieler A.C. (2020)	N/A	According to this study, blockchain technology can reduce fraud and boost transparency, which will greatly boost public confidence in financial reporting. The suggested model can greatly enhance current monitoring systems and add value in identifying, averting, and documenting potential fraud. It is built on five sequential levels, each of which is explained in detail.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this study is that it only explains the relationship between blockchain technology and accounting information based on concepts, case examples, and theoretical explanations without conducting quantitative testing to explain the relationship between variables.
Bakarich K.M.; Castonguay J.J.; O'Brien P.E. (2020)	N/A	The key findings in this study emphasize the benefits of using blockchain for sustainability reporting, including increased trust, transparency, and traceability, as well as the potential for higher quality information and uniform standards in sustainability reports.	The limitations of this study include the difficulty of applying traditional financial auditing techniques to ambiguous and qualitative data, investment constraints (money, time, human resources) for the development of blockchain-based solutions, as well as questions about the scalability and energy consumption of specific blockchain applications.
George K.; Patatoukas P.N. (2020)	N/A	The research finds that blockchain technology has the potential to transform business operations, improve tracking in the supply chain, eliminate the need for intermediaries, and lower contract transaction costs through smart contracts.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Martínez-Ríos F.O.; Marmolejo-Saucedo J.A.; Abascal-Olascoaga G. (2020)	Locate: United States Period: 2019	The main findings in this study involve the suggestion of developing blockchain-based protocols to address issues that arise in the implementation of CSR actions, such as transparency and security. In addition, it was found that it is possible to generate keys and transaction blocks in simulation.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.

Pimentel E.; Boulianne E. (2020)	N/A	The primary findings include a review of the literature on blockchain accounting, the discovery of a sizable interest in taxation and crypto-asset accounting, and a request for more study on the potential applications of blockchain technology in fields like corporate governance and the nexus between accounting and society.	This research has limitations due to its novelty and restricted access to companies, participants, and systems related to the topic of blockchain technology and accounting.
Spilnyk I.; Brukhanskyi R.; Yaroshchuk O. (2020)	N/A	According to the study, the digitalization of the economy has resulted in significant technological and information changes. It has also increased the economic space's information potential, which has helped to modernize accounting science, develop methodology and process organization, actualize the problem of system placement, and elevate the profession's stature.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Adelowotan M.; Coetsee D. (2021)	N/A	The research finds that blockchain features, such as instant verification and resilience to change, provide data integrity for accounting and auditing. Intensive use of blockchain requires economical validation and interventions such as smart contracts to capture the complexity of accounting transactions. The triple-entry accounting system provides a secure way to record accounting information for stakeholders, although it has not changed the two-entry accounting system.	The limitations of this study involve the basic interpretation of existing literature and the need for further empirical research to assess the practical application of blockchain technology in accounting and auditing. In other words, this study is limited to the interpretation of existing literature and still requires further empirical research to evaluate the practical use of blockchain technology in the context of accounting and auditing.
Chen Y.; Hu D. (2021)	N/A	The primary discovery of this research is that traditional financial statements' accounting information is not reliable, relevant, or timely enough, which contributes to the decreasing effectiveness of capital market accounting supervision. This study suggests implementing a blockchain-based system for accounting information disclosure.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Dario C.; Sabrina L.; Landriault E.; De Vega P. (2021)	N/A	The main finding of this research is that Distributed Ledger Transaction (DLT) can address ESG reporting challenges by simplifying the data collection process, creating transparency, and automating ESG report generation. This research presents examples of the use of DLT in ESG reporting activities, showing how DLT can reduce uncertainty, insecurity, and ambiguity in transactions by providing full transaction disclosure.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Hartoyo, A.; Sukoharsono, E.; Prihatiningtyas, Y. (2021)	N/A	The research findings indicate that blockchain can be implemented in Indonesia without relying on cryptocurrency as a payment tool. Blockchain technology can be used as part of the Accounting Information System because it enables comprehensive tracking of accounting transactions. The data stored in blockchain is considered relevant due to its immutable nature. However, blockchain solely serves as a database, and data processing is still carried out through the Accounting Information System. Blockchain does not automatically generate the required accounting information.	This study doesn't explicitly mention its limitations. However, it can be concluded that the limitations of this study lie in its limited scope, which specifically focuses on Indonesia, potentially constraining the generalization of its findings to broader contexts. Additionally, although qualitative approaches and case study methods are valuable for in-depth exploration, these methods may not provide quantitative data for statistical analysis or comparison.

Liu X.; Wu H.; Wu W.; Fu Y.; Huang G.Q. (2021)	N/A	This study suggests a blockchain-based framework to support the ESG reporting sector. The development of the entire solution is predicated on the presentation of multiple core technologies. First, the fact probability of ESG data is determined by developing a concept for a fact-based blockchain gateway. Second, at the report generation stage, a smart contract mechanism is suggested to satisfy the changing service needs of different stakeholders. Third, to accomplish fact indexing and publish ESG reports at the report publication stage, a token-based ESG report publishing mechanism is established. This facilitates the provision of trustworthy and transparent sustainability reports and the fact index by reputable ESG service providers.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Roszkowska P. (2021)	N/A	The study concludes that smart contracts, blockchain technology, and the Internet of Things (IoT) can enhance the reliability and authenticity of financial data, particularly in its early stages. Similar to transactions confirmed by a notary public, a blockchain-based accounting system makes all entries electronically distributed and cryptographically closed, making it nearly impossible for forgery or destruction to hide its operations.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Smith S.S. (2021)	N/A	The research finds that DeFi reflects a shift towards looser operational structures versus centralized options, enabling cheaper, faster, and more efficient cross-border payments and transactions. However, DeFi also brings an additional layer of decentralization, creating opportunities for fraudulent or unethical activities. It should be noted that the operational mission of DeFi may evolve and change over time. Therefore, it is necessary to have a deep understanding of the potential benefits and risks involved in the DeFi ecosystem.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Zadorozhnyi Z.-M.; Muravskyi V.; Muravskyi V. (2021)	N/A	The main findings of this study emphasize the need for effective cyber defense, propose a new mosaic outsourcing model for cybersecurity, and introduce innovative technological approaches to integrating accounting and cybersecurity.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Zhang Y.; Pourroostaei Ardakani S.; Han W. (2021)	N/A	According to this study, blockchain technology, specifically Smart Ledger, has the potential to enhance accounting procedures. This study investigates how blockchain technology might completely change the recording and management of accounting data, opening up new avenues for the storage and backup of private and sensitive information.	The unavailability of expert judgment in blockchain technology and the potential conflict between the need for flexibility in accounting standards and the design of the Smart Ledger are limitations in this study.
Najafi A.; Soleimanpur S.; Morady Z. (2022)	Locate: Iran Period: 2010	The study's primary conclusions highlight how important information technology is to raising the quality of accounting information and how it has a revolutionary effect on financial reporting and accounting.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are the data collected in this study in the form of questionnaires and interviews given to 412 experts, so it can cause bias. In

			addition, this study was also only conducted in Tehran, so the results of this study cannot be generalized.
Pizzi S.; Caputo A.; Venturelli A.; Caputo F. (2022)	Locate: Italy Period: 2020	This research finds that blockchain technology can make a major contribution to improving sustainability reporting. This is because blockchain can provide a transparent, efficient, and cost-effective solution for managing and verifying Environmental, Social, and Governance (ESG) data.	One of the main limitations of this study is that it analyzes an institutional setting characterized by external pressure from regulators.
Singh K.; Yadav J.; Kolar P.; Selvi S. (2022)	N/A	The researcher finds that there has been an increase in global concern for CSR and an emphasis on the environment and sustainability by companies. Blockchain technology has potential as a solution to ensure transparency, reliability, and security for CSR activities that are prone to fraud, and evaluation of social responsibility, technology, and CSR enablers that can assist corporate organizations in achieving sustainable growth.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this research is that it only explains the relationship between blockchain technology and accounting information based on concepts and theoretical explanations from other literature. Researchers also limit the literature sourced from Scopus and WoS with a period range of 2000-2022. In addition, researchers also conducted interviews with 11 experts from practitioners and academics. The results of these interviews can cause limitations because the statements conveyed can be in the form of personal opinions from the interviewed experts, so they can cause bias.
Wu C.; Jin S (2022)	Locate: China Period: 2010-2019	The research indicates that the quality of corporate accounting information is positively impacted by blockchain technology investment. Researchers discovered that the quality of accounting information improved more when blockchain technology analysts paid more attention to it. Additionally, the impact of blockchain technology on the quality of accounting information increases with a company's capacity for innovation.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this study is that it only uses samples in China for the period 2010-2019. This means the results of this study cannot be generalized because it could be that research related to this topic will provide different results if using a sample of other countries and with different periods.
Abu Afifa M.M.; Vo Van H.; Le Hoang Van T. (2023)	Locate: Vietnam Period: 2021	According to this study, there is a high intention among Vietnamese accountants to use blockchain, which suggests that they would benefit from training and direction on the significance and application of blockchain in the workplace. The anticipated model is anticipated to furnish the requisite motivation for accountants to embrace blockchain technology, taking into account variables like occupational significance, reliability, computer self-assurance, and suitability. Furthermore, this study discovered that performance expectations are positively impacted by the quality of accounting information.	The limitations of this study include several points. First, the results cannot be widely generalized due to the limited sample size and focus on one particular country. Second, further empirical research should be conducted in various countries to find similarities and differences. Third, this model should also be applied to Small and Medium Enterprises (SMEs) as these firms tend to adopt digitization in accounting more strongly. Finally, this study does not consider the regulatory role of other factors, such as age, gender, experience, and voluntary compliance.
Alkafaji B.K.A.; Dashtbayaz M.L.; Salehi M. (2023)	Locate: Iraq Period: 2022	According to this study, knowledge of blockchain technology improves the quality of information for both listed and unlisted businesses. Blockchain technology is expected to improve financial statement quality, producing high-quality reports for businesses that have invested in IT applications.	The limitations of this study involve the potential lack of accurate knowledge of blockchain technology by respondents as well as limiting the study to the Iraqi business environment.
Al Shanti A.M.; Elessa M.S. (2023)	Locate: Yordania Period: 2019	According to this study, the advantages of blockchain technology for banks should enhance the efficacy of corporate governance by reducing agency costs, maximizing information asymmetry between shareholders and bank management, and raising information	The lack of previous research on the effects of blockchain technology on accounting statistics and the efficacy of corporate governance, as well as the areas that an anonymous reviewer pointed out for improvement, are some of the study's limitations.

		disclosure. By fortifying the entire information technology infrastructure, the application of blockchain technology is thought to enhance the quality of accounting information, resulting in more open and effective corporate governance.	
Asif M.; Searcy C.; Castka P. (2023)	N/A	The study emphasizes how I5.0 can improve ESG authenticity, allow for real-time reporting and forward-looking insights, increase customization, expand coverage to include more supply chains, and lower disclosure costs. Several of the advantages will vary according to how much I5.0 technology is used.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.
Atanasov A.; Chipriyanova G.; Krasteva-Hristova R. (2023)	N/A	This study underscores the significance of digital technology in augmenting corporate social responsibility endeavors by utilizing better efficiency assessment, stakeholder communication, and market competitiveness. The study's overall conclusions demonstrate how digital technology significantly aids contemporary corporate social responsibility (CSR) initiatives.	This study's limitation is that social network analysis is not used to comprehend how collaboration network relationships develop among authors, organizations, and nations/regions. Furthermore, the selection of the sample for each statistic included some subjectivity. In this study, the authors also state that they have no conflicts of interest.
Fang B.; Liu X.; Ma C.; Zhuo Y. (2023)	N/A	According to the study, implementing blockchain technology strengthens corporate governance, creates synergies with big audit firms, and has a positive effect on financing behavior and firm value, all of which greatly improve the quality of accounting information.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this study is that it only uses samples in China for the period 2010-2019. This means the results of this study cannot be generalized because it could be that research related to this topic will provide different results if using a sample of other countries and with different periods.
Hakami T.; Sabri O.; Al-Shargabi B.; Rahmat M.M.; Nashat Attia O. (2023)	N/A	The primary conclusion of the study is that, although there has been a rise in the field, blockchain research on auditing is still relatively new and of high quality. China and the United States are the two nations that receive the most citations, according to the study. Furthermore, there is a greater prevalence of research on blockchain, auditing, and smart contract topics than on data analytics, governance, hyperledgers, distributed ledgers, and financial reporting.	The limitations of this study include a small sample size, original topics that require further research, a limited period of analysis, and a lack of research in the area of blockchain technology in the context of auditing.
Corazza L.; Zhang J.; Arachchilage D.K.; Scagnelli S.D. (2023)	N/A	According to this study, a decentralized approach using blockchain technology can increase the transparency and reliability of carbon-related information in the supply chain. This study offers a theoretical discourse grounded in the development of prospective situations that employ blockchain principles in sustainability reporting and disclosure to tackle concerns like data manipulation even in the face of audits and certifications.	Limitations of this study include the predictive and conceptual nature of the research, as well as the need for further development and investigation in various areas of sustainability management and reporting.
Chen C.-H. (2023)	Locate: Taiwan Period: 2015-2021	According to this study, businesses that practice high levels of corporate social responsibility perform better financially. The positive correlation between CSR management and business performance is reinforced by the implementation of blockchain technology. The impact of a CSR report on business performance is greater than that of blockchain adoption.	The limitations of this study include the assumption of time-invariant independent variables, limited explanatory power due to integrating only two independent variables, and the potential lack of panel data representation from Taiwan.

Chowdhury E.K.; Khan I.I.; Dhar B.K. (2023)	Locate: Banglad esh	According to the findings, when considering using blockchain technology in accounting to increase data reliability and lessen auditor workload, respondents take privacy, usability, cost, and convenience into consideration.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this study is that it only uses primary data in the form of questionnaires, so it can cause research bias. In addition, researchers also did not explain the period when the survey was conducted. Researchers also only used a sample of Bangladesh.
Chowdhury E.K.; Stasi A.; Pellegrino A. (2023)	N/A	The study concludes that a central authority is not required to oversee transactions or maintain records due to the decentralized nature of blockchain technology. This could lower the risk of fraud and improve the efficiency and transparency of financial accounting.	This study did not explicitly mention the limitations of its research. However, it can be concluded that the limitation of this study is that it only uses samples in China. This means the results of this study cannot be generalized because it could be that research related to this topic will provide different results if using a sample of other countries. In addition, this study uses questionnaires in its measurements. This may cause research bias.
Pandey D.; Gilmour P. (2023)	N/A	The study highlights difficulties with asset valuation, transaction recording, revenue recognition and deferral, and jurisdictional diversity. Blockchain technology generates new virtual assets that are not adequately taken into account by existing laws and accounting principles. The research acknowledges the potential advantages of the metaverse, but it also points out challenges that stand in the way of efficient accounting, like anonymity and jurisdictional issues.	This research is unable to cover a wide range of multidisciplinary issues, which might have been achieved through a more detailed synthesis using a more systematic literature review. Some questions remain unanswered. Given the global nature of the metaverse involving multiple geographies and jurisdictions, it is imperative to recognize the urgent need for specific recommendations and solutions to address the gaps and challenges identified in the accounting and taxation domains.
Saxena A.; Singh R.; Gehlot A.; Akram S.V.; Twala B.; Singh A.; Montero E.C.; Priyadarshi N. (2023)	N/A	The main findings of the study are the importance of accurate ESG data and the role of digital technology, particularly artificial intelligence (AI), in evaluating ESG metrics and enabling sustainable investment, as well as challenges related to consistency and accuracy in ESG data collection and reporting.	The limitations of this study include the lack of consistency in ESG evaluation systems, the need for a consistent and evolving ESG evaluation framework, challenges in ESG data collection, increased carbon emissions due to data storage, and costly implementation of the digital twin concept with the Internet of Things (IoT).
Shapovalova A.; Kuzmenko O.; Polishchuk O.; Larikova T.; Myronchuk Z. (2023)	N/A	According to this study, implementing the Accounting 4.0 paradigm's modernization ideas into practice could boost global competitiveness, promote the growth of the digital economy, and enhance the efficiency and quality of accounting and auditing. This can be accomplished by implementing cutting-edge digital technologies that guarantee reliability and transparency in accounting and auditing, enhance data analysis, and automate procedures. Adjustments of this kind will boost output, lower risk, and boost trust in financial reporting.	This study does not explicitly mention the limitations of its research. However, it can be concluded that the limitations of this study are that it only explains the relationship between blockchain technology and accounting information based on theoretical concepts and explanations without conducting quantitative testing to explain the relationship between variables.